AIREDALE

air conditioning for every environment

AlphaCool Plus

Controlled by AIRETronix

Downflow - Close Control System - Chilled Water
100 kW-125 kW

TECHNICAL MANUAL

ISO 14001
EMS52086

ISO 9001
FM00542

About Airedale Products & Customer Services

WARRANTY, COMMISSIONING & MAINTENANCE

As standard, Airedale guarantees all non consumable **parts only** for a period of **24 months**, variations tailored to suit product and application are also available, please contact Airedale for full terms and details.

To further protect your investment in Airedale products, we have introduced Airedale Service, who can provide full commissioning services, comprehensive maintenance packages and service cover 24 hours a day, 365 days a year (UK mainland). For a free quotation contact our Airedale Service or your local Sales Engineer.

All Airedale products are designed in accordance with EU Directives regarding prevention of build up of water, associated with the risk of contaminants such as Legionella.

Effective removal of condensate is achieved by gradient drainage to outlets and where used, humidification systems produce sterile, non-toxic steam during normal operation.

For effective prevention of such risk it is necessary that the equipment is maintained in accordance with Airedale recommendations.

CAUTION **Warranty cover is not a substitute for Maintenance. Warranty cover is conditional to maintenance being carried out in accordance with the recommendations provided during the warranty period. Failure to have the maintenance procedures carried out will invalidate the warranty and any liabilities by Airedale International Air Conditioning Ltd.**

SPARES

A spares list for 1, 3 and 5 years will be supplied with every unit and is also available from our Spares department on request.

TRAINING

As well as our comprehensive range of products, Airedale offers a modular range of Refrigeration and Air Conditioning Training courses, for further information please contact Airedale.

CUSTOMER SERVICES

For further assistance, please e-mail: ***enquiries@airedale.com*** or telephone:

UK Sales Enquiries	+ 44 (0) 113 238 7789	***uk.sales@airedale.com***
International Enquiries	+ 44 (0) 113 239 1000	***enquiries@airedale.com***
Spares Hot Line	+ 44 (0) 113 238 7878	***spares@airedale.com***
Airedale Service	+ 44 (0) 113 239 1000	***service@airedale.com***
Technical Support	+ 44 (0) 113 239 1000	***tech.support@airedale.com***
Training Enquiries	+ 44 (0) 113 239 1000	***marketing@airedale.com***

For information, visit us at our Web Site: ***www.airedale.com***

Contents

General Description

UNIT IDENTIFICATION

ALPHACOOL PLUS CLOSE CONTROL RANGE	
DF	Downflow Configuration
100-125	Model Sizes
CW	Chilled Water
AT	AIRETronix **Controls**
eg	**DF100CW-AT**

INTRODUCTION

Designed to provide environmental Close Control tolerances within the conditioned space, such as Telecommunication Facilities, Computer Rooms and Clean Rooms, the AlphaCool Plus is available as chilled water in 2 model sizes. Full function units provide full control of temperature and humidity.

A full range of Airedale chillers are available to complement the chilled water indoor units.

CE DIRECTIVE

Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC)	**89/336/EEC**
Low Voltage Directive (LVD)	**73/23/EEC**
Machinery Directive (MD)	**89/392/EEC in the version 98/37/EC**
Pressure Equipment Directive (PED)	**97/23/EC**

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

STANDARD FEATURES

Construction

The units are constructed in 2 sections; cooling cabinet with integrated filter box and floorstand with integrated fan assembly and fan housing.

Cooling Cabinet & Floorstand: Welded structures with an Epoxy baked paint finish that gives a durable and easily cleaned protective finish.

Integrated Fan Housing/Assembly: Galvanised sheet steel.

Cabinets and fan housing are lined internally with fire resistant foam (UL94 V0) for thermal and acoustic insulation.

The cabinet doors are hinged and key lock secured.

Standard unit colour is Light Grey (RAL 7035).

All units can be maintained and serviced from the front.

Floorstand

The enclosed floorstand is 520mm minimum (including the adjustable feet ±20mm) and is offered up to a height of 750mm as standard. For heights above 750mm, please contact Airedale.

Supplied with a front discharge as standard, rear discharge can be provided if specified at time of order.

Chilled Water Coil

Large surface area coil(s) ideally positioned to optimise airflow and heat transfer, manufactured from refrigeration quality copper tubes with mechanically bonded aluminium fins.

Coil headers are circuited to ensure low water pressure drops.

The cooling coil is fitted with full width stainless steel condensate trays.

For control of water flow, a 3 port modulating mixing control valve is fitted as standard.

General Description

STANDARD FEATURES

Fan & Motor Assembly

Housed within the floorstand, the Plug type fan with backward curved motorised impeller is driven internally by a direct drive motor.

Benefiting from energy efficient direct drive motors and high static efficiency of the impeller.

Fan speed, airflow and external static pressure are controlled by the use of a voltage controller which maintains optimised performance and reduced energy consumption.

Airflow Switch

An airflow switch activates an audible and visual alarm at the status panel and breaks the control power supply in the event of a fan and motor failure.

Filters

97mm thick, pleated disposable panel filters to BS EN 779 – G4.

Electrical

The control panel contains the necessary fan motor contactors and overloads, relays, transformer, sub circuit protection, volt free contacts, mains and inter-connecting terminals. The panel is situated within the cabinet allowing easy access to other components within the unit. The electrical control panels are wired to the latest European standards and codes of practice.

Main Electric Isolator

To ensure complete unit isolation of the electrical panel during adjustment and maintenance a lockable base mounted isolator is provided as standard.

Controls

Units are fitted with the AIRETronix microprocessor controller which offers powerful analogue and digital control to meet a wide range of monitoring and control features including a real time clock and a communication port plus networking and BMS connections.

A keypad/display assembly is used to view the unit status and allow operator adjustment. A simple text display is supplied as standard with the option of a ***Graphical Display***.

For full details, please refer to the ***Controls*** section.

OPTIONAL EXTRAS

Humidifier

Humidification is provided by an electrode boiler. The sealed humidifier design ensures that only clean sterile steam is supplied to the conditioned area and corrosive salts and minerals are held in the disposable bottle. The steam is distributed through a sparge pipe fitted to the coil assembly.

Featuring modulating capacity output control as standard, the system provides continuous modulation of steam output in response to a proportional control signal. The output control range is 20%-100% of the humidifier rated value and is designed to give an approximate steam output of +/- 3%, thus ensuring precise control of the conditioned space.

The cylinder operating life time is automatically optimised via the integrated water conductivity sensor, which combined with the AIRETronix controls monitors and regulates the water refill cycle to reduce excessive salt deposits and the progressive wear of the cylinder. For further details, refer to ***Design Features & Information section, Humidification***.

All humidifier parameters and alarms are accessible and adjustable via the microprocessor display unit, main features include:

- Supply water conductivity (µS/cm)
- Actual steam output (kg/h)
- Required steam output (kg/h)
- Actual current rating (A)
- Required current rating (A)
- Status mode (Start Up, Running, Filling, Draining)

General Description

OPTIONAL EXTRAS

Water Conductivity & Cylinder Type

Conductivity is a measure of the ability of water to pass an electric current, measured in micro Siemens / centimetre (μS/cm). 3 different cylinders are available which correspond to the supply water conductivity.

Matching the correct cylinder type with the conductivity of the supply water ensures optimum performance and increases the life span of the cylinder (up to 2,500 working hours).

1	Low Conductivity	(Soft Water)	125 to 350 μS/cm
2	Standard Conductivity	(Moderate/Hard Water)	350 to 750 μS/cm
3	High Conductivity	(Very Hard Water)	750 to 1250 μS/cm

As standard the humidifier is fitted with the standard conductivity cylinder which covers the majority of water supplies. Where the water conductivity is known, this should be specified at the time of order. For further details please contact Airedale.

Cleanable Humidifier Cylinder

The humidifier can be fitted with a take apart cylinder enabling the bottle and the electrodes to be cleaned and reused. The cylinder can typically be cleaned 3 times before replacing either the electrodes or the entire cylinder.

The cleanable humidifier cylinders are available in 8kg and 15kg bottle sizes with standard or high conductivity levels only. For further details please contact Airedale.

Heating Options

Electric Heating

Multi-stage finned electric heating elements complete with auto and manual reset overheat cut-out protection, phase balanced for increased efficiency.

Condensate Pump

The condensate pump has a 6 litre reservoir with a capacity of 4.6 l/m at a total head of 11.0 m and is mounted in the unit base, for pump performance, refer to ***Design Features & Information section, Condensate Pump Performance***.

Constant Air Volume

Fan speed can be modulated to maintain a constant air volume by the differential pressure between the case and fan inlet ring being monitored.

Floor Tile Mounting Kit

To facilitate the easy installation of tiles adjacent to the unit. The kit offers support for tiles up to 65mm thickness and the assembled kit is affixed to the unit floorstand.

Water Detector

Solid state sensor either unit base mounted or supplied loose for remote mounting on site.

Firestat

Installed in the return air stream to shut down the unit in the event of an unusually high return air temperature.

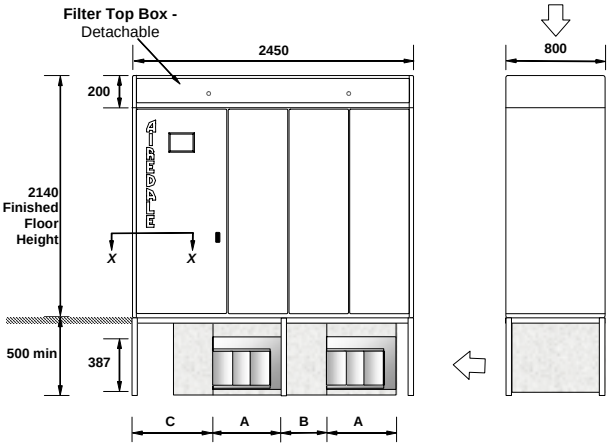
Water Control Valve

For control of water flow, a 2 way modulating mixing control valve is fitted as standard.

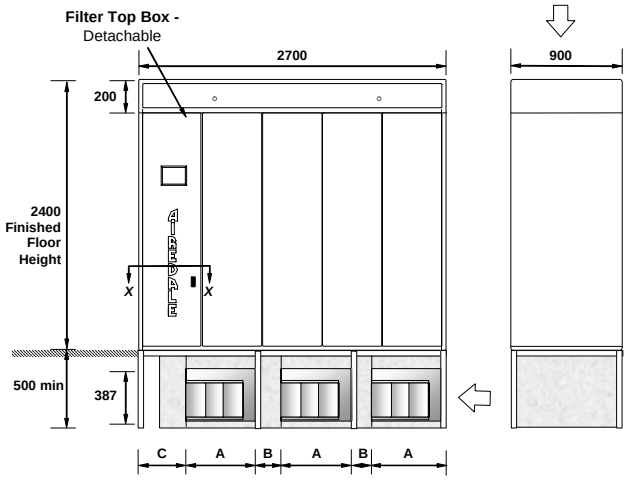
Dimensional Data

DIMENSIONS (MM) & WEIGHTS (KG)

DF100CW



DF125CW

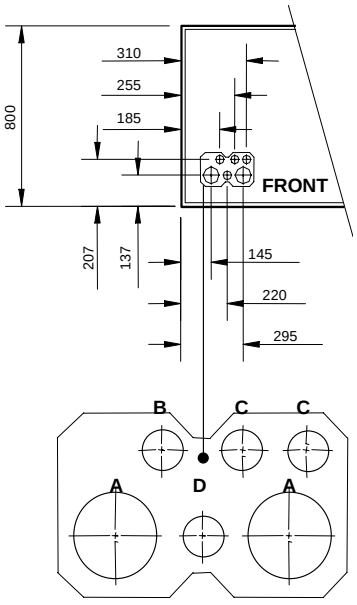


	Dimensions (mm)			Weights (kg)	
Model Size	**A**	**B**	**C**	**Cabinet**	**Floorstand**
DF100CW	739	272	590	435	230
DF125CW	616	212	370	520	315

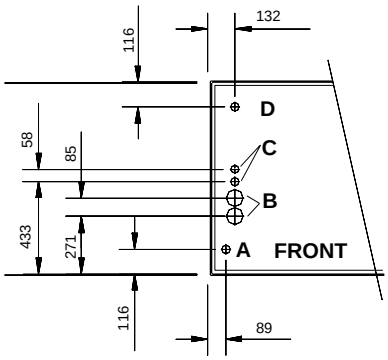
1 Units shown with floorstand/fan assembly & fan housing in place with standard front discharge.

VIEW ON X - X FOR SERVICE POSITIONS (MM)

DF100CW



DF125CW



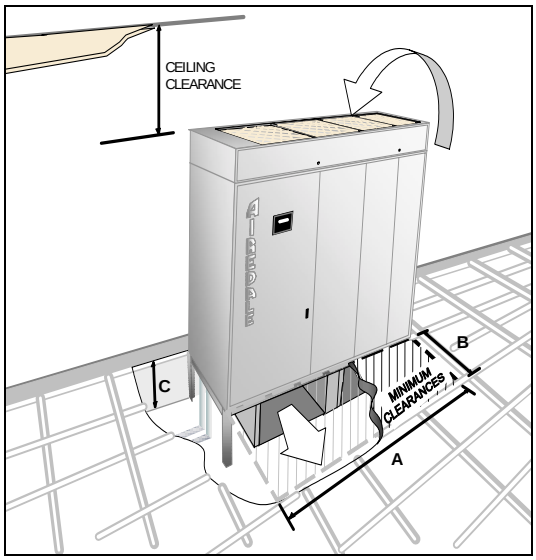
Showing Pipework Hole Terminations

A = 75mm Ø - Water Inlet/Outlet
B = 38mm Ø - Drainage
C = 38mm Ø - Humidity Services
D = 38mm Ø - Electrical Services

A = 38mm Ø - Electrical Services
B = 75mm Ø - Water Inlet/Outlet
C = 38mm Ø - Humidity Services
D = 38mm Ø - Drainage

Dimensional Data

POSITIONING (MM)



Model Size		A	B	C
DF100CW	mm	2450	1300	Minimum 500
DF125CW	mm	2700	1300	Minimum 500

MINIMUM CEILING CLEARANCE (MM)

		Front Only	Front & 1 Side	Front & 2 Sides	All Faces
When Return air is limited to:	mm	650	550	450	350

1 Units shown with floorstand/fan assembly & fan housing in place with standard front discharge.
2 Shaded area indicates minimum service and maintenance requirements.
3 Dimension C: standard maximum floorstand height 750mm, please contact Airedale for larger sizes.

Performance Data

COOLING DUTIES (GROSS) (1)

Cooling Capacity		Chilled Water Inlet/Outlet °C					
	Air On ºC DB	7/12°C		8/14°C		10/16°C	
	/ % RH	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
	22 / 50	95.0	87.2	77.6	75.1	51.9	51.9
DF100CW	24 / 45	111.1	102.2	94.7	91.9	73.3	73.3
	26 / 40	126.2	116.3	110.8	107.7	93.5	93.5
	22 / 50	117.0	106.2	97.2	93.1	66.4	66.4
DF125CW	24 / 45	136.4	124.1	117.1	112.5	91.2	91.2
	26 / 40	154.7	141.1	135.9	130.8	114.6	114.6

TC = Total Cooling SC = Sensible Cooling

(1) Deduct fan motor gain for nett duties, refer to ***Mechanical Data***.
(2) Water flow rate (l/s) = TC ÷ (4.19 x ΔT).

OPERATING LIMITS

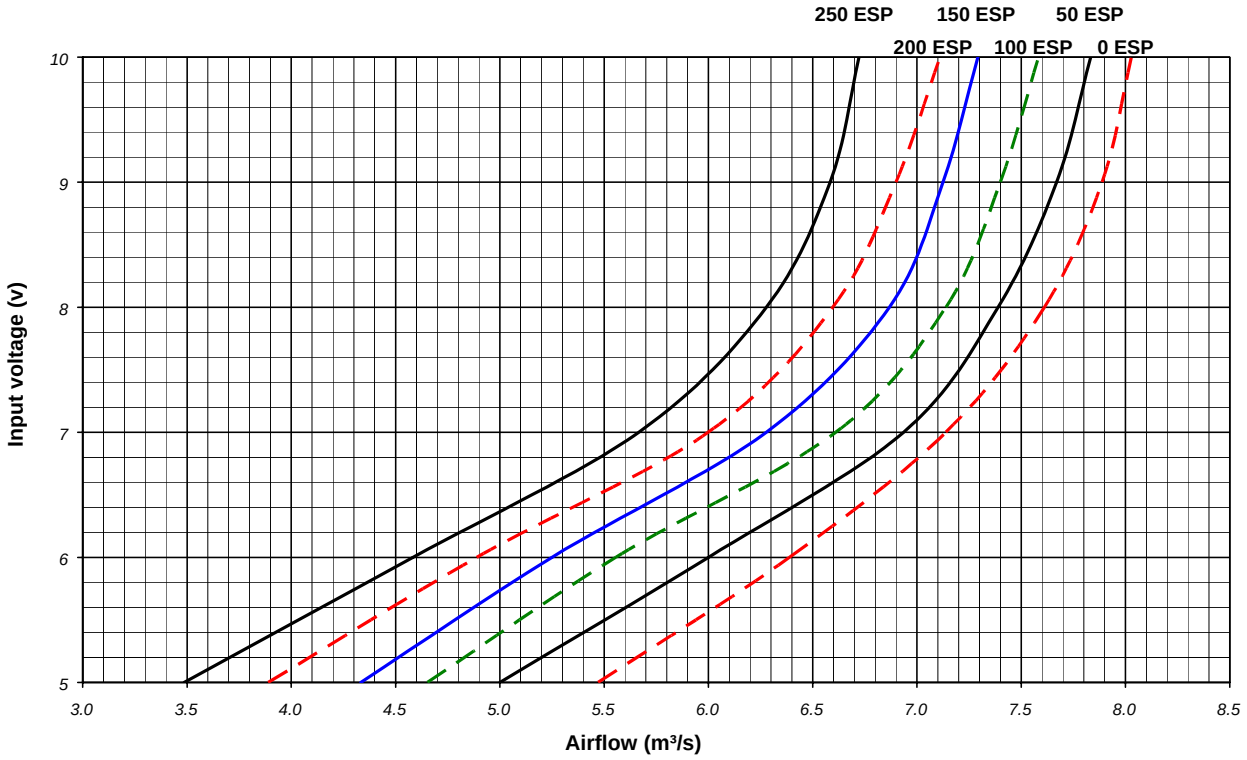
Cooling	
Indoor Temperature	+18°C to +32°C
Water Entering Temperature	+5°C to +15°C

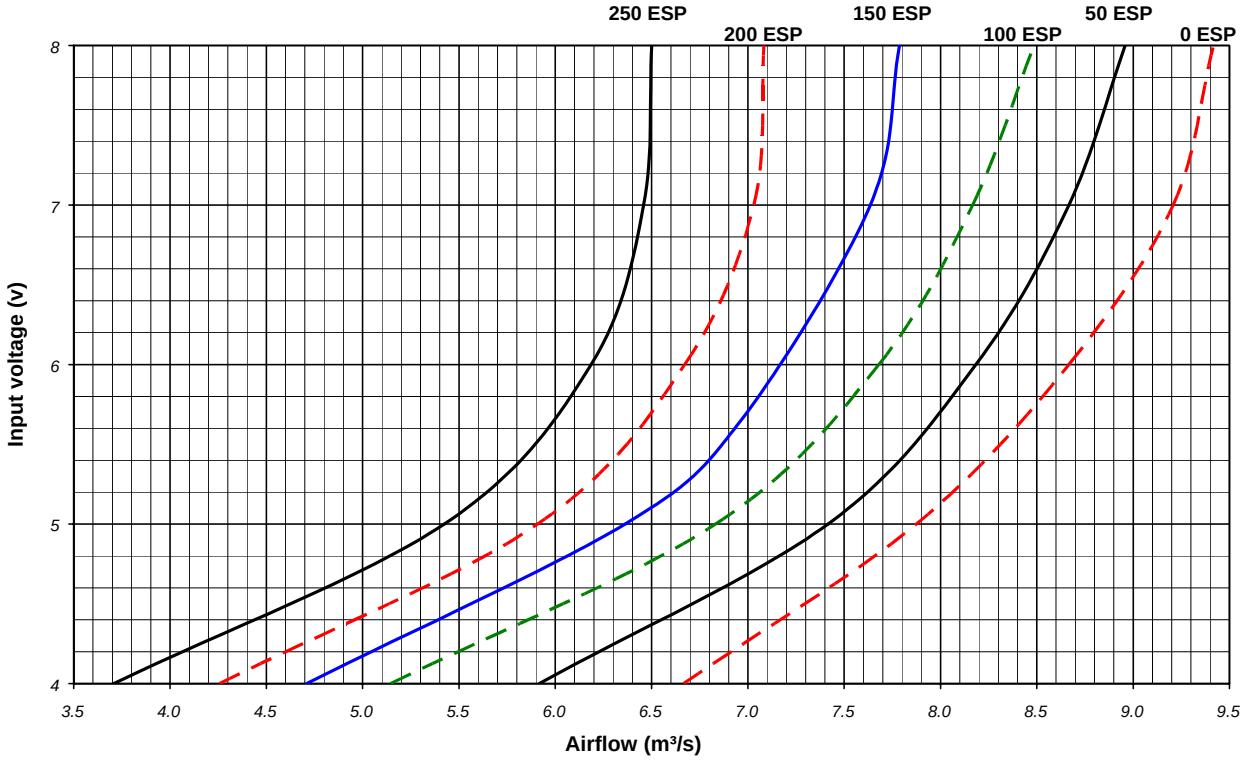
Performance Data

SYSTEM AIRFLOW CHARACTERISTICS

If the required Airflow and External Static is known, the correct input voltage can be determined using the following graphs. The input voltage can be adjusted to suit via the AireTronix display, refer to the ***Installation & Maintenance Manual***.

DF100CW





General Specification

MECHANICAL DATA

			DF100CW	DF125CW
Capacity	(1)			
Nom Cooling Capacity (Gross)		kW	111.1	136.4
Nom Fan Gain		kW	4.8	7.2
Dimensions				
H x W x D - Cabinet		mm	2140 x 2450 x 800	2400 x 2700 x 900
H x W x D - Floorstand/Fan		mm	500 x 2450 x 800	500 x 2700 x 900
Weight				
Machine - Cabinet		kg	435	520
Machine - Floorstand/Fan		kg	230	315
Construction				
Material/Colour			Galvanised Sheet Steel, Epoxy Baked Powder Paint– Light Grey (RAL 7035)	
Cooling Coil			Copper Tube/Turbulated Aluminium Fins	
Face Area		m²	3.1	4.0
Cooling/Dehum Stages			1/1	1/1
Fan & Motor	(2)		Backward Curved Motorised Impeller Plug Type	
Motor Size / Quantity		kW	4.1 x 2	4.1 x 3
Maximum ESP		Pa	145	220
Speed @ Maximum ESP		rpm	1380	1380
Nominal Airflow		m³/s	6.9	8.3
Connections				
Inlet/Outlet		mm	54	54
Condensate Drain Hose		mm	19	19
Filtration			Pleated Disposable to BS EN 779 – G4 – 97mm Deep	
Quantity			4	5
Size H x W			720 x 575	800 x 520
Optional Extras				
Heating		kW	30.0	37.5
Humidifier				
Capacity		kg/hr	15	15
Feed/Drain			3/4” BSPF Braided flexible hose/16mm barbed hose connection	
Condensate Pump				
Head		m	4.5	4.5
Flow		l/m	0.65	0.65
Drain			3/8” OD Copper	

(1) Entering air 24°C/45% RH water 7°C/12°C.

(2) ESP quoted available with standard filters and nominal airflow, for additional information please refer to ***Performance Data System Airflow Characteristics***.

General Specification

ELECTRICAL DATA

			DF100CW	DF125CW
Unit Data - Standard	(1)			
Nominal Run Amps		A	14.1	20.9
Maximum Start Amps		A	58.5	87.5
Recommended Mains Fuse Size		A	25	40
Max Mains Incoming Cable Size		mm²	4	6
Mains Supply		V	400V/3Ph/50Hz (+/- 10%)	
Control circuit		VAC	24VAC (+/- 10%)	
Unit Data - Full Function	(2)			
Nominal Run Amps		A	73.3	91.0
Maximum Start Amps		A	73.3	91.0
Recommended Mains Fuse Size		A	100	125
Max Mains Incoming Cable Size		mm²	25	35
Mains Supply		V	400V/3Ph/50Hz (+/- 10%)	
Control circuit		VAC	24VAC (+/- 10%)	
Cooling Coil Fan - Per Fan				
Motor Rating		kW	4.1	4.1
Full Load Amps		A	6.8	6.8
Locked Rotor Amps		A	29	29
Optional Extras				
Electric Heating				
Stage of Reheat			3	3
Number of Elements			12	15
Rating		kW	30	37.5
Current Per Phase		A	43.5	54.3
Humidifier				
Capacity		kg	15	15
Rating		kW	11.25	11.25
Full Load Amps		A	15.80	15.80

(1) Values given for standard cooling only unit at ARI conditions.
(2) Values given for full function units at ARI conditions.

Sound Data

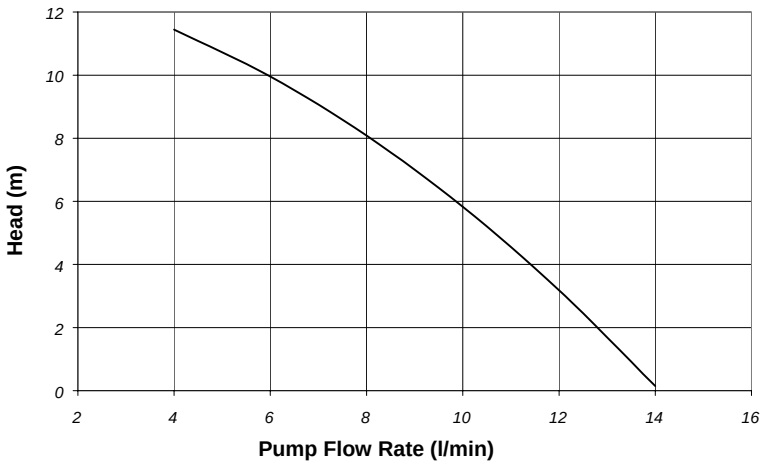
Sound Measurement			DF100CW	DF125CW
Discharge Air	SWL	dB(A)	76.3	78.8
Return Air	SWL	dB(A)	74.1	74.6
Case Breakout	SWL	dB(A)	76.0	75.0
Sound Pressure	@ 3m	dB(A)	60.2	58.8

All sound data quoted has been measured in the third-octave band, limited values using a Real Time Analyser calibrated sound intensity meter. All measurements are for nominal capacities, as per ***General Specification*** and 75Pa ESP.

1 Sound Power Levels calculated from measured sound intensity according to BS EN ISO9614 Part 1 : 1995.
2 Sound Pressure Levels calculated from sound power using the expanded parallel piped method according to BS EN ISO11203 : 1996.
3 dBA is the overall sound level, measured on the A scale.
4 The Sound Pressure data quoted is where the unit is installed adjacent to a reflective wall and placed on a reflective base.
5 Sound Pressure measured at a distance of 3m is recorded at a height of 1.5m from finished floor level.
6 The above data is based on unit nominal duty only.

Design Features & Information

CONDENSATE PUMP PERFORMANCE



HUMIDIFICATION

Control Principles

In a humidifier with electrodes, steam is produced by passing a current between electrode plates to generate heat. The higher the current being passed between the electrodes, the greater the quantity of steam that is produced.

To modulate the rate of steam production, this system varies the level of water within the cylinder, thereby increasing the immersion level of the electrodes and the current being passed between them. The more conducting area that is available to pass current between the electrodes, the larger the amount of steam that is produced.

Modulated by the AIRETronix controller, the water level is varied so that the level of steam being produced ensures that the room humidity set-point is continually maintained within a tight tolerance.

Optimised Lifetime

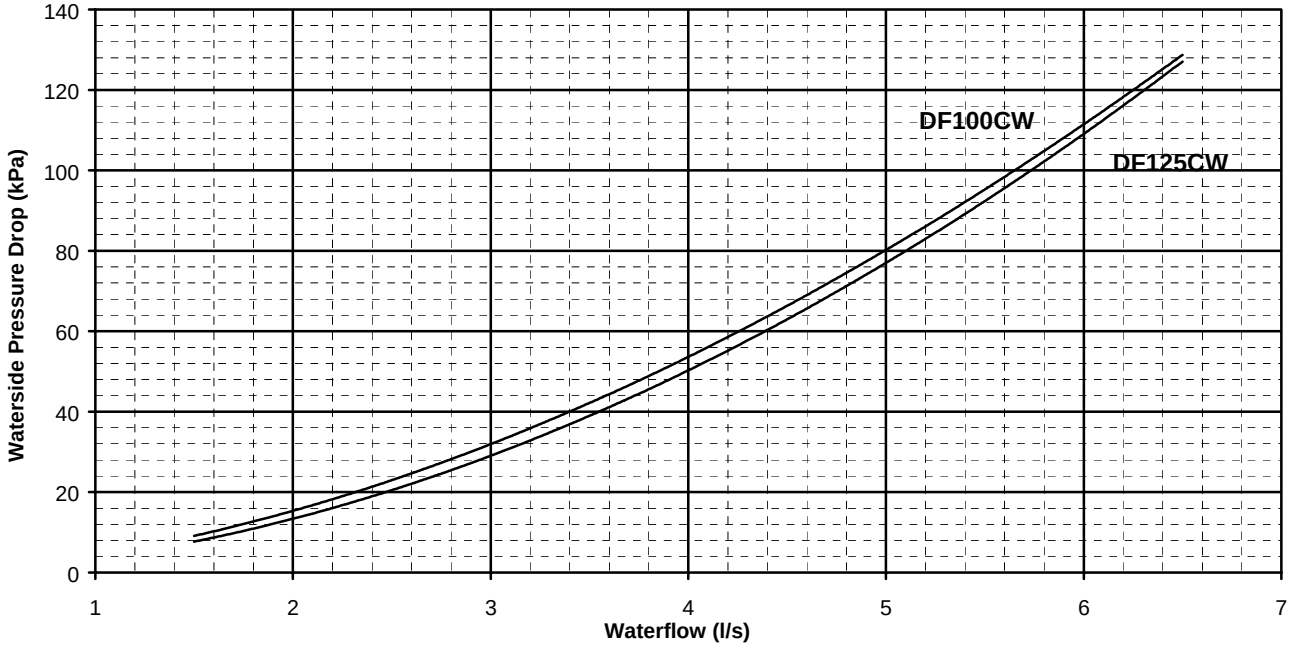
The life span of the Airedale humidification system is optimised by the inclusion of a water conductivity sensor into the bottle feed. This sensor determines the conductivity level of the supply water and by using an algorithm embedded in the AIRETronix software, determines the frequency that the bottle should be drained.

EXAMPLE:
(Optimised Lifetime with High Water Conductivity Supply)

As liquid water is boiled off into steam, mineral deposits are left in solution increasing the conductivity of the water. To counter this the intelligent software increases the frequency of drain meaning that the replenishing supply water keeps the concentration of minerals diluted. By maintaining an acceptable mineral concentration, the bottle life span is maximised.

Design Features & Information

WATERSIDE PRESSURE DROP (KPA) (1)



(1) Includes coil, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop

$$\Delta P \text{ valve} = \left(\frac{Q}{M}\right)^2$$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and $M = \left(\frac{Kv}{36}\right)$

M Values for Chilled Water Valves

Model	DF100CW	DF125CW
Chilled Water	1.11	1.11

Design Features & Information

ETHYLENE GLYCOL CORRECTION FACTORS

For conditions outside those quoted, please refer to Airedale.

The Use of Glycol

Glycol is recommended when a supply water temperature of +5°C or below is required or when static water can be exposed to freezing temperatures.

The effect of glycol in the system has a direct effect upon the Cooling Duty, the Design Flow Rate and the unit Pressure Drop.

For a given percentage of glycol in the system there are correction factors that need to be applied.

Correction Factors

		Ethylene Glycol (Volume) / Freezing Point °C			
		10% / -4°C	20% / -9°C	30% / -15°C	40% / -23°C
Cooling Capacity	$Q\chi$	0.980	0.940	0.890	0.830
Flow Rate	$F\chi$	4.051	3.794	3.537	3.302
Pressure Drop	$P\chi$	1.041	1.083	1.133	1.200

To Calculate the Cooling Capacity (kW)

The chilled water cooling capacity can be calculated using the following equation:

$$Q = Qw \times Q\chi$$

Where:
Q = Total Cooling Capacity (kW)
Qw = Equivalent Water Cooling Capacity. Refer to ***Cooling Duties (Gross)***.
$Q\chi$ = Cooling Capacity Correction Factor. Refer to ***Correction Factors***.

To Calculate the Design Volumetric Flow Rate ($\dot{V}$)

The maximum design volumetric flow rate can be calculated using the following equation:

$$\dot{V} = \frac{Q}{F\chi \times \Delta T}$$

Where:
Q = Total Cooling Capacity (kW) (as calculated from above equation).
ΔT = Temperature Difference between Water/Glycol Inlet/ Outlet (°C).
$F\chi$ = Flow Correction Factor. Refer to ***Correction Factors***.

To Calculate the Indoor Unit Pressure Drop (kPa)

The maximum indoor unit pressure drop can be calculated using the following equation:

$$\Delta P_S = \Delta P_W \times P\chi$$

Using the volumetric flow rate calculated above, the pressure drop (ΔP_W) can be taken from the chilled water pressure drop graph. Refer to ***Waterside Pressure Drop (kPa)***

Where:
ΔP_S = Maximum Water/Glycol Pressure Drop for the indoor unit (kPa).
ΔP_W = Equivalent Water Pressure Drop for indoor unit (kPa).
$P\chi$ = Pressure Drop Correction Factor. Refer to ***Correction Factors***.

Design Features & Information

ETHYLENE GLYCOL CORRECTION FACTORS

Example

Model Ref. = **DF100CW**
Air on Conditions = 24°C dB / 45%RH
Glycol Content = 20% Ethylene Glycol
Inlet Water/Glycol Temp. = 7°C
Outlet Water/Glycol Temp. = 12°C (***5°C ΔT***)

CHILLED WATER COOLING CAPACITY (kW)

$$Q = Qw \times Q\chi$$

Where:
Qw = 111.1 kW.
$Q\chi$ = 0.94

$$Q = 111.1 \times 0.94$$

Cooling Capacity Q = 104.43 kW

DESIGN VOLUMETRIC FLOW RATE (l/s)

$$\dot{V} = \frac{Q}{F\chi \times \Delta T}$$

Where:
Q = 104.43 kW (As calculated from above equation)
ΔT = (12°C – 7°C) = 5
$F\chi$ = 3.794
Glycol content = 20%

$$\dot{V} = \frac{104.43}{3.794 \times 5}$$

Flow Rate $\dot{V}$ = 5.5 l/s

MAXIMUM INDOOR UNIT PRESSURE DROP (kPa)

$$\Delta P_S = \Delta P_W \times P\chi$$

Where:
ΔP_W = 94 kPa (at flow rate 5.5 l/s)
Taken from CW pressure drop graph
$P\chi$ = 1.083

$$\Delta P_S = 94 \times 1.083$$

Pressure Drop ΔP_S = 101.8 kPa

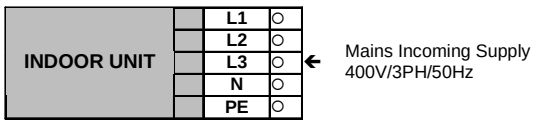
SUMMARY

Model Ref. = DF100CW - 20% Ethylene Glycol
Gross Total Cooling Capacity = 104.39 kW
Design System Flow Rate = 5.5 l/s
Indoor Unit Pressure Drop = 101.8 kPa

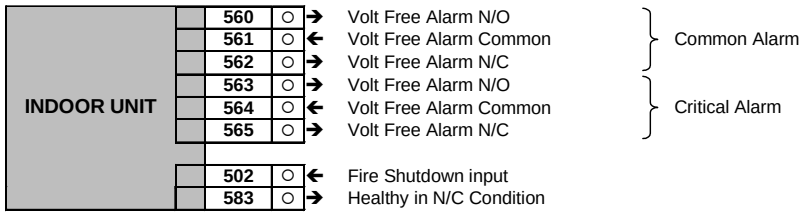
Note: No noticeable change to <u>sensible heat ratio.</u>

Design Features & Information

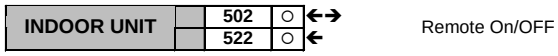
INTERCONNECTING WIRING



Indoor Controls Only



Remote On/Off



CABLE INSTALLATION

In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm.
- If cables must cross, it is recommended that they cross at right angles.
- Airedale recommends that ELV cables are screened at both end to earthed enclosures.

AIRETronix - Controls

GENERAL

As standard the units are supplied with an AIRETronix microprocessor controller connected to a 4x20 back-lit LCD display, with an optional 240x128 pixel back-lit LCD graphic display.

The AIRETronix microprocessor controller can be linked together locally to provide run/standby operation. Windows based supervisor software is also available for local or remote networking. This modular approach provides great flexibility while at the same time reducing installation and maintenance costs.

Utilising a high speed 14MHz 16 bit CPU with a minimum 1MB FLASH program memory and 256kB RAM data memory and supplied with inbuilt relays capable of switching up to 8A resistive loads as standard.

TEMPERATURE CONTROL

A combined temperature and humidity sensor is mounted in the return air with an option for remote mounting within the conditioned space.

The temperature sensor is a NTC type thermistor accurate to greater than ±0.5°C and the humidity sensor is accurate to ±3 %.

The Airedale microprocessor senses the Return Air conditions and maintains the Return air Temperature and Humidity conditions by controlling cooling, heating, humidification and dehumidification outputs accordingly. The supply air temperature is monitored by the controller providing an option of Supply Air temperature limiting.

The microprocessor monitors and displays the following values:

- Return Air Temperature
- Return Air Humidity
- Supply Air Temperature
- Chilled Water Flow Temperature
- Chilled Water Return Temperature

ALARM HANDLING

An Audio-Visual alarm will be generated under the following conditions:

- Return air temperature high limit
- Return air temperature low limit
- Return air humidity high limit
- Return air humidity low limit
- Supply air temperature high limit
- Supply air temperature low limit
- Airflow failure
- Overheat cut-out
- Filter change alarm
- Manual override
- Fire/smoke alarm
- Water Flood
- Power fail reset
- Communications failure
- Humidifier alarm (low production, no water supply etc)
- Maintenance

STANDARD FEATURES

User Friendly Display

The default screen shows the unit status without the need for interrogation and an easy to navigate menu structure for further interrogation and adjustment.

Remote On/Off

Terminals for interlocking are provided to enable or disable the unit remotely.

AIRETronix - Controls

STANDARD FEATURES

Evaporator Fan Hours Run Log & Reset

Allows the user to monitor the running times of the evaporator fans and reset after maintenance.

Duty/Standby Operation

The controller enables units to operate in run/standby mode, with up to 6 units networked together, without the need for additional hardware or controllers. Standby units can be configured to start when the run unit has a critical alarm and/or a high/low return air temperature alarm.

Duty Rotation
(Network Units)

Networked units can be configured to duty rotate, providing equal hours run of fans.

Chilled Water Temperature Monitoring

NTC type thermistors are provided to monitor the chilled water entering and leaving temperatures.

Evaporator Fan Speed Controller

Evaporator fan speed control is easily set via the keypad/display and can be incrementally increased or decreased to meet on site airflow requirements, refer to ***Fan Speed Adjustment*** in the ***Installation & Maintenance manual***.

Occupied / Unoccupied Set Points

Occupied and unoccupied set points are provided for temperature and humidity.

OPTIONAL EXTRAS

Graphical Display

The 240 x 128 pixel back-lit LCD display has an icon based default screen with a menu driven structure making this an aesthetically pleasing, user friendly navigation and adjustment tool with high functionality. Graphical illustration of temperature and humidity levels are available on screen for operation analysis. The larger graphical display can cater for special characters to suit customer language requirements.

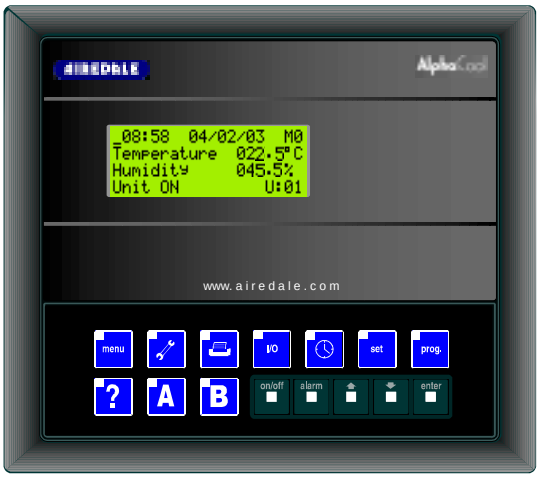
3rd Party Interfaces

A wide range of protocols can be accommodated through the use of interface devices. Available as a standard option are: ModBus/JBus, Carel and Trend.

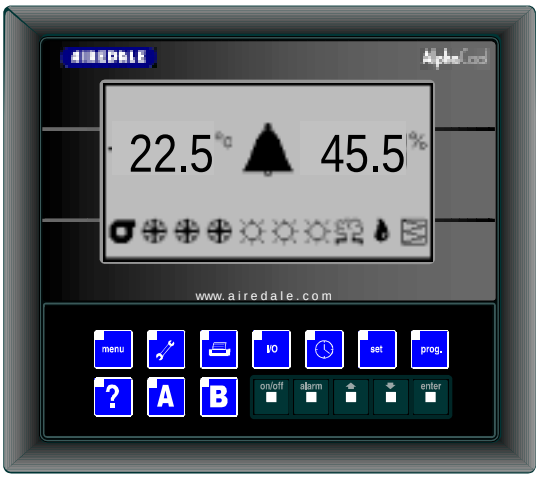
For interfaces such as SNMP, LonWorks, Metasys and BACnet, please contact Airedale.

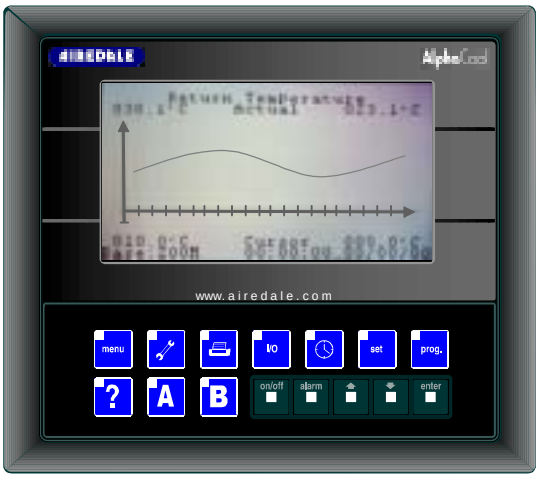
AIRETronix - Controls

TEXT DISPLAY



GRAPHIC DISPLAY





Head Office:

Airedale International Air Conditioning Ltd
Leeds Road
Rawdon
Leeds LS19 6JY
United Kingdom

Tel: **+44 (0) 113 239 1000**
Fax: +44 (0) 113 250 7219

e-mail: ***info@airedale.com***
website: ***www.airedale.com***

A MODINE Company

PART NO:	ISSUE	DATE
901-067 TM E	~~A~~	~~01/09/01~~
	~~B~~	~~27/09/01~~
	C	01/11/03